










Date: Tuesday, 04/11/2008 11:19:21 AM
 User: Julie Dawson

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: WHEEL SHAFT
Job Number	: 43190		
Estimate Number	: 10449		
P.O. Number	:	Part Number	: D33341
This Issue	: 04/11/2008 S.O. No. :	Drawing Number	: D3334 REV. C
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: / / Type : MACHINED PARTS	Drawing Revision	: C
Previous Run	: 42474	Material	:
Written By	:	Due Date	: 20/11/2008 Qty: 10 Um: Each
Checked & Approved By	JLD 08.11.04		
Comment	: Est: B 05.03.02 Revised material; Added Powder Coat KJ/J LM Est Rev:C Now on Doosan Lathe 08-03-06 JLM Verified By:EC Est Rev:D Now Rev C 08-05-14 JLM Verified By:DD		
Additional Product			
Job Number: 			
Seq. #:	Machine Or Operation:	Description :	
1.0	M4140HR3500	4140 RD bar 3.500	
			
Comment: Qty.: 0.6563 f(s)/Unit Total: 6.5630 f(s) 4140 HEAT TREATED BAR Material: AISI 4140 or ASTM A304-02/A-434-BC/A193-03-Grade-B7/A29-03/A322-91 or UNS# G41400 (M4140H-R3.500) Batch: <u>1109877</u> <u>ML 08/12/03</u> (10)			
2.0	BAND SAW	BAND SAW	
			
Comment: BAND SAW 1- Cut blanks: Ø3.500" Bar to 7.750" long <u>ML 08/12/03</u> (10)			
3.0	DOOSAN LATHE	DOOSAN LATHE	
			
Comment: DOOSAN LATHE 1- Turn and Mill as per Folio FA492 and Dwg D3334 2- Deburr Test Thread with Test Nut for every part <u>ML 08/12/20</u> (10)			
4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE	
			
Comment: INSPECT PARTS AS THEY COME OFF MACHINE <u>ML 08/12/20</u>			

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3334-1 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR: 43190		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
08/12/19	3.0	THREAD SCRAP BECAUSE OF OPERATOR ERROR. Removed the part & put back into the machine to re-thread, & the positioning was off. R.C. operator error.		Scrap & replace w/	 08/12/19	 09/01/13		 08.12.22
08/12/20	3.0	1 part scrap & drill broke inside hole. Hole oversized and damaged. R.C. Tooling wear		scrap - NO Replace	 08/12/20	 09/01/13		 08.12.22
9/1/13	3.0	all 8 parts have 0.129" through hole at the end of the shot measuring 0.230" from end (supposed to be 0.200") R.C. operator changed	 09.01.13	→ Try shutt on wheels to see if saveable.	 09/01/13	 09.01.13		 09.01.13

NOTE: Date & initial all entries wrong all set

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Drawing Name: WHEEL SHAFT

Job Number: 43190

Part Number: D33341

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC8

SECOND CHECK



Comment: SECOND CHECK

2d 09/01/15 (9)

6.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat Fire Red (Ref: 4.3.5.10) as per QSI 005 4.3

Mask thread and bearing surface

START TIME:

2:20

OVEN TEMPERATURE:

320°

FINISH TIME:

3:00

FL 09/01/19

(9)

7.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT

A. D.

09.01.20

(9)

8.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: 483

9/1/20

SEP

(9x)

9.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

09/01/21

Job Completion



U 09.01.20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

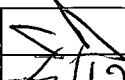

NOTE: Date & initial all entries



DART AEROSPACE LTD		Work Order: 43190
Description: Wheel Shaft		Part Number: D3334-1
Inspection Dwg: D3334	Rev: C	Page 1 of 1

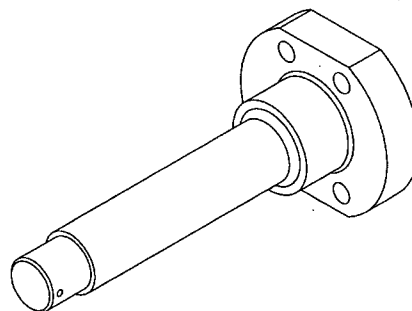
FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.94	+/-0.030	.93	/			
0.200	+/-0.010	.230		/		
Ø0.129	+0.005/-0.000	Ø.129	/			
4.740	+0.000/-0.030	4.730	/			
1.04	+/-0.030	1.074	/			
Ø1.750	+/-0.010	Ø1.750	/			
0.750	+/-0.010	.750	/			
1.180	+0.000/-0.002	1.179	/			
2.250	+/-0.005	2.250	/			
1.125	+/-0.010	1.125	/			
3.060	+/-0.010	3.060	/			
Ø0.386	+0.006/-0.001	Ø.387	/			
1.300	+/-0.005	1.300	/			
Ø3.470	+/-0.010	Ø3.470	/			

Measured by: 	Audited by: 	Prototype Approval:	N/A
Date: 8/12/20	Date: 07/01/15	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	05.04.26	New Issue	KJ/JLM	
B	08.05.06	Tolerance for dimension Ø0.386 revised	KJ/DD	
C	08.05.14	Dimensions updated per Dwg Rev C	KJ/JLM 	



D3334-1 WHEEL SHAFT

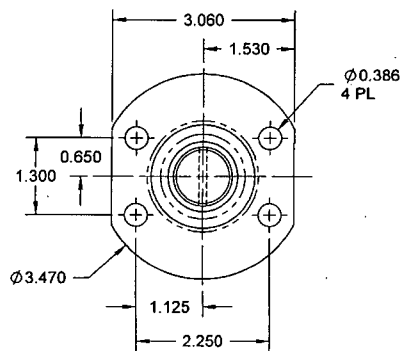
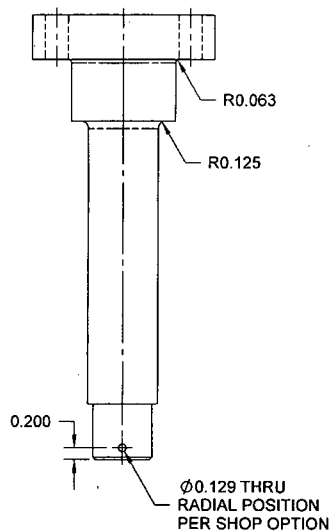
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NOTES:

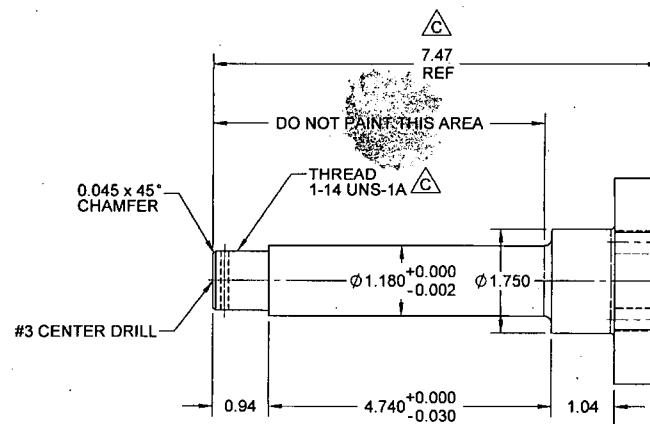
- 1) MATERIAL: AISI 4140 OR ASTM A304-02/ A-434-BC/ A193-03-GRADE-B7/ A29-03/ A322-91
OR: UNS# G41400
(REF. DART SPEC. M4140H-R3.500)
- 2) FINISH: POWDER COAT COLOUR FIRE RED (4.3.5.10) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.010 TO 0.020 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3334-1" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 4.03 lbs

RELEASED
 08-05-12

C	INCORPORATED B1 (03.470 WAS 3.500), REFORMAT TO CURRENT STANDARDS. TOP VIEW ADDED. ZN C3-2 7.47 REF WAS 7.468. ZN B3-2 THREAD CALL OUT WAS 1-14 UNF. ZN C5-2 COTTER PIN HOLE LOCATION (RADIAL) CHANGED TO SHOP OPTION.	AJS	08.05.12
B	REDESIGN TO FIT NEW WHEEL ASSY.	MB	05.02.18
A	NEW ISSUE	MB	04.12.16
REV.	DESCRIPTION	BY	DATE
DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D3334 TITLE WHEEL SHAFT SCALE NTS	
DRAWN	AJS		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.		SHEET 1 OF 2	
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D3334-1 WHEEL SHAFT



RELEASED
08-05-12

DESIGN	MB	DART AEROSPACE LTD	
DRAWN	JS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D3334	REV. C
MFG. APPR.		TITLE	SHEET 2 OF 2
APPROVED		WHEEL SHAFT	SCALE
DE APPR.			NTS
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